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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/733,487	12/11/2003	Andreas Schmohl	600.1256	7692

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EXAMINER	
ZIMMERMAN, JOSHUA D	
ART UNIT	**PAPER NUMBER**
2854	

DATE MAILED: 01/10/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/733,487	SCHMOHL ET AL.	
	Examiner	Art Unit	
	Joshua D. Zimmerman	2854	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11 December 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-25* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-25* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *11 December 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *12/11/03 9/7/04*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

1. Claim 3 is objected to because of the following informalities: there appears to be a typographical error in line 1. --The printing form claim 1-- should be --The printing form according to claim 1--. Appropriate correction is required.

2. Claim 24 recites the limitation "fluoroalkylmethoxysilanes" in line 2. There is insufficient antecedent basis for this limitation in the claim. For the purpose of examination, examiner assumes that since claim 23, from which 24 depends, recites the use of alkylchorosilanes, applicant means chloroalkylmethoxysilanes instead of fluoroalkylmethoxysilanes.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-2, 4-5, 7-14, 16-18 and 21-22 are rejected under 35 U.S.C. 102(b) as being anticipated by Hess, WO 0021753. The translation of WO 0021753 submitted by applicant, US 2002/0035938, has been used to reject the claims.

3. Regarding claim 1, Hess discloses "a printing form (figure 1, item 10) comprising:

a surface having inorganically bonded silicon and a pattern composed of hydrophilic and hydrophobic regions, the hydrophilic regions having a first chemical

state and the hydrophobic regions having a second chemical state differing from the first state (see paragraph 46, specifically lines 18-20);

in at least one of the hydrophobic regions, the surface having silicon atoms, at least one organic terminal group being attached to the silicon atoms of the at least one hydrophobic region in each instance, the silicon atoms being substituted not only exactly with one CH_3 group or with one OCH_3 group (figure 2, item 30 and paragraph 52)."

4. Regarding claim 2, Hess discloses "wherein the surface is made of amorphous, nanocrystalline, polycrystalline or crystalline silicon, or a stoichiometric or non-stoichiometric silicon ceramic containing oxygen and/or nitrogen (paragraph 37 lines 5-7, paragraph 49 and claim 23)."

5. Regarding claim 4, Hess discloses "wherein, in at least one of the hydrophilic regions, the surface has silicon atoms, oxide and/or hydroxy terminal groups and/or silyl amine and/or aldehyde terminal groups and/or carboxyl terminal groups being attached to the silicon atoms (figure 2, item 30)."

6. Regarding claim 5, Hess discloses "wherein, in at least one of the hydrophobic regions, the organic terminal groups are unsubstituted and/or partially chlorinated and/or completely chlorinated and/or partially fluorinated and/or completely fluorinated terminal groups (paragraph 52)."

7. Regarding claim 7, Hess discloses "wherein, in at least one of the hydrophobic regions, the organic terminal groups have fewer than 21 carbon atoms (paragraph 5 $SiOCH_3$ has 1 carbon)."

8. Regarding claim 8, Hess discloses "wherein, in at least one of the hydrophobic regions, the organic terminal groups are attached by an Si-C bond and/or an Si-O-C bond and/or an Si-O-Si-C bond (paragraph 52)."

9. Regarding claim 9, Hess discloses "wherein, in at least one of the hydrophobic regions, silicon atoms at the surface carry a plurality of organic terminal groups (paragraph 52. Examiner interprets the claim to mean that there is a plurality of organic terminal groups at the surface, and not that each Si atom is bonded with more than one organic terminal group)."

10. Regarding claim 11, Hess teaches "a method for modifying the wetting properties of a printing form having a surface with inorganically bonded silicon (paragraph 6), the method comprising the steps of:

bringing the surface into a first chemical state having a first wetting property (paragraph 7);

bringing a portion of the surface into a second chemical state having a second wetting property by modifying chemical terminal groups of the surface (paragraph 8);

organic terminal groups being attached to silicon atoms at an hydrophobic area of the surface in such a way that the silicon atoms are substituted not only exactly with one CH_3 group or with one OCH_3 group (figure 2 item 30 and paragraph 52)."

11. Regarding claim 12, Hess further teaches "wherein either the first wetting property is hydrophilic and the second wetting property hydrophobic, or the first wetting property hydrophobic and the second wetting property hydrophilic (paragraph 10, lines 9-13)."

12. Regarding claim 13, Hess further teaches "wherein the surface is amorphous, contains nanocrystalline, polycrystalline or crystalline silicon, or is a stoichiometric or non-stoichiometric silicon ceramic with oxygen and/or nitrogen (paragraph 18 and claim 15)."

13. Regarding claim 14, Hess further teaches "wherein, in at least one of the hydrophobic areas, unsubstituted and/or partially chlorinated and/or completely chlorinated and/or partially fluorinated and/or completely fluorinated alkyl terminal groups are attached as organic terminal groups (paragraph 52)."

14. Regarding claim 16, Hess further teaches "wherein the second chemical state is brought about by localized processing using a controlled light source so that the second chemical state corresponds to an image information to be printed or to a negative of the image information to be printed (paragraphs 14 and 15)."

15. Regarding claim 17, Hess further teaches "wherein the chemical state having hydrophilic wetting properties is achieved by thermal heating or photochemically (paragraph 15)."

16. Regarding claim 18, Hess further teaches "wherein aryl groups and/or alkyl groups and/or fluoralkyl groups and/or chloroalkyl groups are attached to the surface via an Si-C bond through photoinitiation of halogenosilanes, alcohols, alkenes or alkynes (paragraph 52)."

17. Regarding claim 21, Hess further teaches "wherein aryl groups and/or alkyl groups are attached to the surface via an Si-O-C bond as a result of reactions of primary alcohols and/or secondary alcohols and/or aldehydes (paragraph 52)."

18. Regarding claim 22, Hess further teaches "wherein the reaction is initiated and/or accelerated by the action of light (paragraph 52)."

19. Claim 25 is rejected under 35 U.S.C. 102(b) as being anticipated by Kobayashi et al. (US 6,294,313)."

20. Kobayashi et al. disclose "a printing form (figure 1c) comprising:

a surface having inorganically bonded silicon and a pattern composed of hydrophilic and hydrophobic regions, the hydrophilic regions having a first chemical state and the hydrophobic regions having a second chemical state differing from the first state;

at least one of the hydrophobic regions having silicon atoms at the surface having at least one organic terminal group attached thereto, the at least one organic terminal group including one of: at least one organic group other than CH_3 and OCH_3; a CH_3 group and at least one further organic group; and OCH_3 and at least one additional organic group (see figure 1c, specifically organic group R)."

Claim Rejections - 35 USC § 103

21. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

22. Claims 6, 10 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hess. Hess teaches all that is claimed as stated above in the rejections of claims 1, 5 and 14. Regarding claim 6, Hess does not specifically disclose that "wherein, in at

least one of the hydrophobic regions, the organic terminal groups each have a chain of a plurality of carbon atoms, to which CH_3 or CF_3 groups are attached." Hess does disclose in paragraph 52 the use of alcohol, and gives the example of methanol. Examiner notes that if a larger chain alcohol is used, e.g., ethanol or propanol, a plurality of carbon atoms would occur in the terminal groups. It would have been obvious to one of ordinary skill in the art at the time of the invention to use a longer chain alcohol in order to increase the hydrophobicity of the hydrophobic region.

23. Regarding claim 10, if isopropyl alcohol is used, three methyl groups will be attached to a Si atom. It would have been obvious to one of ordinary skill in the art at the time of the invention to use a longer chain alcohol in order to increase the hydrophobicity of the hydrophobic region

24. Regarding claim 15, claim 14 stands rejected as above. Hess does not specifically disclose "chains of a plurality of carbon atoms." However, as stated above in the rejection of claim 6, if longer chain alcohols are used, a plurality of carbon atoms will be in the chain. It would have been obvious to one of ordinary skill in the art at the time of the invention to use a longer chain alcohol in order to increase the hydrophobicity of the hydrophobic region

25. Claims 3, 19, 20, 23 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hess in view of Kobayashi et al.

26. Regarding claim 3, Hess discloses substantially all that is claimed as discussed in the above rejection of claim 1. Hess also discloses that the printing form is in the form of a printing plate or printing cylinder (paragraph 37) and that the surface has an

amorphous film (paragraph 38). However, Hess fails to disclose that the printing form specifically comprises a metallic carrier. Kobayashi et al. disclose a printing form for use in printing which contains a metal substrate (column 22, lines 4-6). It would have been obvious to one of ordinary skill in the art at the time of the invention to use the metal substrate of Kobayashi et al. in the invention of Hess in order to have a stronger printing plate.

27. Regarding claims 19 and 20, Hess discloses substantially all that is claimed as discussed in the above rejection of claim 11. Hess does not specifically teach the use of trimethylsilyl derivatives, namely the recited limitation of claim 20: using hexamethyldisiloxane or hexamethyldisilizane. Kobayashi et al. disclose the use of such compounds (organopolysiloxanes) for use in making hydrophobic regions on a printing plate (column 8, lines 41-47). It would have been obvious to one of ordinary skill in the art at the time of the invention to use the compounds of Kobayashi et al. in the method of Hess in order to create a more hydrophobic region on the printing plate.

28. Regarding claims 23 and 24, Hess discloses substantially all that is claimed as discussed in the above rejection of claim 11. Hess fails to disclose the use alkylalkoxysilanes, alkylaminosilanes and/or alkylchlorosilanes, nor does he disclose the use of alkyltrimethoxysilanes and/or chloroalkylmethoxysilanes as further specified in claim 24. However, Kobayashi et al. disclose the use of chlorosilanes for attaching functional groups to a silicon surface on a printing plate (column 8, lines 41-47). It would have been obvious to one of ordinary skill in the art at the time of the invention to use

the compounds of Kobayashi et al. in the method of Hess in order to create a more hydrophobic region on the printing plate.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joshua D. Zimmerman whose telephone number is 571-272-2749. The examiner can normally be reached on M-R 8:30A - 6:00P, Alternate Fridays 8:30A-5:00P.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew Hirshfeld can be reached on 571-272-2168. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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Examiner
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